Claim 11.   (New) An image processing method for correcting pixel values of each pixel constituting color image data by shifting, in a coordinate system, a mathematical correction function defining correction values for input values, the method comprising the computer-implemented steps of:

determining a maximum value and a minimum value among correction values (b, g, r) of respective color components obtained for each pixel by using said correction function, calculating differences (Δb, Δg, Δr) between the respective correction values of the respective color components and said minimum value, and calculating a difference (DR) between said maximum value and said minimum value; .

dividing said calculated differences (Δb, Δg, Δr) between the respective correction values of the respective color components and said minimum value by said calculated difference (DR) between said maximum value and said minimum value, thereby to obtain color ratios (Cb, Cg, Cr) for the respective color components;

determining, as an inappropriate pixel, any pixel having a correction value overflowing from a predetermined maximum output gradation value and setting said overflowing correction value to said predetermined maximum output gradation value and determining, as an inappropriate pixel, any pixel having a correction value underflowing from a predetermined minimum output gradation value and setting said underflowing correction value to said predetermined minimum output gradation value; and

controlling color balance adjustment so as to cause the correction values of said inappropriate pixel to agree with said respective color ratio thereof.

Claim 12.   (New) The image processing method of claim 11, wherein the step of controlling utilizes sums of said minimum value and respective product values obtained by multiplying a differences between the maximum output gradation value and the minimum value by the color ratios as the respective final pixel

values if the correction value of at least one color component overflows from the maximum output gradation value.

Claim 13.   (New) The image processing method of claim 11, wherein the step of controlling utilizes the product value obtained by multiplying the maximum value by its color ratio as its final pixel value, if the correction value of at least one color component underflows from the minimum output gradation value.

Claim 14.   (New) An image processing apparatus for correcting pixel values of each pixel constituting color image data by shifting, in a coordinate system, a mathematical correction function defining correction values for respective input values, the apparatus comprising a color balance adjustment section for adjusting color balance of the corrected image data, the color balance adjustment section comprising:

a calculating section for determining a maximum value and a minimum value among correction values (b, g, r) of respective color components obtained for each pixel by using said correction function, calculating difference (Δb, Δg, Δr) between the respective correction values of the respective color components and said minimum value, calculating a difference (DR) between said maximum value and said minimum value, and dividing said calculated differences (Δb, Δg, Δr) between the correction values of the respective color components and said minimum value by said calculated difference (DR) between said maximum value and said minimum value, thereby to obtain color ratios (Cb, Cg, Cr) for the respective color components;

a judging section for determining as an inappropriate pixel, any pixel having a correction value overflowing from a predetermined maximum output gradation value and setting said overflowing correction value to said predetermined maximum output gradation value, and determining as an inappropriate pixel, any pixel having a correction value underflowing from a predetermined minimum output gradation value and setting said underflowing correction value to said predetermined minimum output gradation value; and

a gradation value determining section for controlling color balance adjustment so as to cause the correction values of said inappropriate pixel to agree with said respective color ratio thereof.

Claim 15.   (New) A computer-readable medium comprising code for correcting pixel values of color image data, said code comprising instructions for:

determining a maximum value and a minimum value among correction values (b, g, r) of respective color components obtained for each pixel by using said correction function, calculating differences (Δb, Δg, Δr) between the respective correction values of the respective color components and said minimum value, and calculating a difference (DR) between said maximum value and said minimum value;

dividing said calculated differences (Δb, Δg, Δr) between the respective correction values of the respective color components and said minimum value by said calculated difference (DR) between said maximum value and said minimum value, thereby to obtain color ratios (Cb, Cg, Cr) for the respective color components;

determining, as an inappropriate pixel, any pixel having a correction value overflowing from a predetermined maximum output gradation value and setting said overflowing correction value to said predetermined maximum output gradation value, and determining, as an inappropriate pixel, any pixel having a correction value underflowing from a predetermined minimum output gradation value and setting said underflowing correction value to said predetermined minimum output gradation value; and

controlling color balance adjustment so as to cause the correction values of said inappropriate pixel to agree with said respective color ratio thereof.

Claim 16.   (New) An image processing apparatus for outputting image data consisting of a plurality of image data described in the RGB color system in a predetermined gradation range, the apparatus comprising:

a conversion section for converting the image data in the RGB color system into a different color system for image quality adjustment to provide converted image data;

an image quality adjustment section for adjusting image quality of the converted image data;

a reverse conversion section for reverse converting the image quality adjusted image data back into the RGB color system to provide a reverse-converted image data;

a judging section for determining whether pixel values of each pixel constituting the reverse-converted image data are confined within said predetermined gradation range; and

a color balance adjustment section for performing a predetermined calculation on pixel values of the respective color components included in each pixel determined as being out of said predetermined gradation range by the judging section, thereby to cause the pixel values thereof to be confined within said predetermined gradation range, and adjusting said pixel values of said each pixel to fixedly maintain a ratio among the pixel values of the respective color components based on the minimum value among said pixel values.

Claim 17.   (New) The image processing apparatus of claim 16, wherein the color balance adjustment section is operable to fixedly maintain an average value of the pixel value of each color component contained in the pixel prior to the adjustment.

Claim 18.   (New) The image processing apparatus of claim 16, wherein the judging section is operable to determine a maximum pixel value contained in the pixel as overflowing from the predetermined gradation range; and wherein the color balance adjustment section is operable to cause the maximum pixel value to agree with the maximum value of the predetermined gradation range.